

WHAT IS CLAIMED IS:

1. A client-server system for transferring a database from a server to a client, the system comprising:

a server connectable to a network, the server having a memory accessible thereto;

a source database accessible to the server having data stored therein, the source database having metadata associated therewith identifying a structure and at least one field of the source database;

a client connectable to the network for communication with the server, the client having a memory accessible thereto for storing a copy of the source database;

the server accesses the source database and retrieves the metadata and at least a portion of the data and stores the retrieved data in at least one data object, each data object corresponding to a field of the database;

the server sends the metadata and the at least one data object to the client;

the client receives the metadata and the at least one data object from the server and generates and stores a copy of the database using the metadata, and populates the copy of the database with the data from the at least one data object; and wherein

the client-server system provides for the transfer of a source database to the client across various database types, vendors and operating systems without development effort.

2. The client-server system according to claim 1 wherein the server further comprises a data access application which includes an executable program for generating and executing queries to the database for retrieving the metadata and the data therefrom and storing the retrieved data in at least one data object, each data object corresponding to a field of the database.

3. The client-server system according to claim 1 wherein the metadata includes at least one of:
 - a database identifier;
 - a list of tables stored in the database;
 - a list of columns for each table; and
 - a data type for each column.
4. The client-server system according to claim 1 wherein the database is a relational database.
5. The client-server system according to claim 4 further comprising a database server coupled to the database.
6. The client-server system according to claim 2 wherein the data access application further comprises a programming interface for accessing the database.
7. The client-server system according to claim 6 wherein the programming interface is a Java DataBase Connectivity (JDBC) component.
8. The client-server system according to claim 5 wherein the database server further comprises a Relational DataBase Management System (RDBMS).
9. The client-server system according to claim 1 wherein the client further comprises a Relational DataBase Management System (RDBMS).
10. The client-server system according to claim 1 wherein the network is the Internet and the client is a Java applet executed on a Java enabled web-browser.
11. The client-server system according to claim 10 wherein the Java applet is downloadable from the server to the client.
12. The client-server system according to claim 1 wherein the database to be copied is identified in a request from the client using a Uniform Resource Locator (URL).

13. The client-server system according to claim 12 wherein the copy of the database is generated in response to the execution of a GUI function.
14. The client-server system according to claim 2 wherein the server further comprises a web-server for communicating with the client.
15. The client-server system according to claim 14 wherein the data access application stores the metadata in a structure object and the structure object and the at least one data object in a database object and transfers the database object to the web-server for transfer thereof to the client.
16. The client-server system according to claim 15 wherein the web-server serializes the database object prior to the transfer thereof to the client.
17. The client-server system according to claim 1 wherein the server further comprises a request processing application for validating client access to a requested database or portion thereof.
18. The client-server system according to claim 14 wherein the web-server communicates with the client via Hypertext Transfer Protocol (HTTP).
19. The client-server system according to claim 1 further comprising an incremental transfer process for maintaining synchronization between the source database and the copy of the source database residing on the client system.
20. The client-server system according to claim 1 further comprising a Web based utility for client viewing and modifying database data in a source database, the utility operable across database types, vendors and operating systems.
21. The client-server system according to claim 1 further comprising a data verification process for verifying the integrity of the data objects transferred to the client over the network.

22. A data access application for use in transferring a database from a server to a client, the database having data stored therein and associated metadata identifying a structure and at least one field of the database, the data access application comprising an executable program for:

- retrieving from the database the metadata and at least a portion of the data stored therein;

- storing the retrieved data in at least one data object, each data object corresponding to a field of the database;

- transferring the metadata and the at least one data object to the server for transfer thereof to the client;

- wherein the data access application operates without further development across database types, vendors and operating systems.

23. The data access application according to claim 22 further comprising an executable program for:

- storing the metadata in a structure object;

- converting the retrieved data to string objects and storing the string objects in the at least one data object;

- storing the structure object and the at least one data object in a database object; and

- transferring the database object to the server for transfer thereof to the client.

24. The data access application according to claim 22 further comprising a Java DataBase Connectivity (JDBC) interface for accessing the database and retrieving therefrom the metadata and at least a portion of the data stored therein.

25. A method for transferring a database from a server to a client, the method comprising the steps of:

at a server:

providing a source database having data stored therein, the source database having metadata associated therewith identifying a structure and at least one field of the database;

accessing the source database and retrieving the metadata and at least a portion of the data stored therein;

storing the retrieved data in at least one data object, each data object corresponding to a field of the database from which the data stored in the data object was retrieved;

sending the metadata and the at least one data object to a client;

the server operating on the source database across various database types, vendors and operating systems without requiring development effort;

at a client:

receiving the metadata and the at least one data object;

generating a copy of the source database according to the metadata;

populating the copy of the source database with data retrieved from the at least one data object.

26. The method of claim 25 further comprising:

at the server:

storing the metadata in a structure object;

storing the structure object and the at least one data object in a database object;

serializing the database object; and

transferring the database object to the client.

27. The method of claim 25 further comprising:
at the server:
 - comparing a size of the database object to a maximum size prior to the transfer thereof to the client; and
 - if the size of the database object is greater than a maximum size, segmenting the database object and separately transferring each of the segments to the client.
28. The method of claim 27 further comprising:
at the server:
 - generating an auxiliary object for storing the segments of the database object exceeding the maximum size prior to the transfer thereof to the client.
29. The method of claim 25 further comprising:
at the server:
 - querying the source database for retrieving the metadata and the data stored therein.
30. The method of claim 29 further comprising:
at the server:
 - providing a programming interface for accessing and querying the source database.
31. The method of claim 25 further comprising:
at the server:
 - validating a client for authorization to access the source database or a portion thereof prior to accessing the source database.
32. The method of claim 25 further comprising:
 - maintaining synchronization between the source database and the copy thereof residing on the client.

33. The method of claim 25 further comprising:
providing a Web based utility for client viewing and modifying the
source database.